ASD Weekly Highlights for the Week Ending 03-Mar-2006

Operations

- Working on ARR Preparation
  - 112 Open Action Items
  - Meeting weekly on Wednesdays to resolve open items

- Working on:
  - Accelerator Safety Envelope
  - Readiness Plan of Action
  - Various Procedures both new and revised for Integrated Operations with XFD

- Scheduling of work in the Post CD-4 period.
  - Obtained schedule from XFD for 8 weeks of work
  - Sent request for tasks to ASD Group Leaders

- Work Control
  - Gave presentation to Group Leaders on the SNS Work Control process and a first look at the SNS Service Request System and the Datastream work pages.

Accelerator Physics

RF Systems

- Continuing to work on LLRF system. We have resolved a problem with the cavity dynamic tuning waveform generator.
- We had two control panels fail this week and are working on the repair/replacement of these panels.

Ion Source

- We have e-mailed two SNS safety presentations to ANL after receiving a request for information on innovative safety measures implemented on the ion source high voltage platform.

- We have installed sheathed banana receptacles in a breaker-panel that supplies AC to the high voltage platform. After a check-out, this will allow for fully compliant, finger-safe LOTO verification without having to enter into potential high voltage areas.

Instrumentation and Controls

- Phase 4 PPS integration testing for the accelerator (i.e. for FE, Linac, HEBT, Ring, and RTBT) was completed. Certification will begin Monday morning. Chipmunk certification was completed for the accelerator.

- Target PPS integration testing and Instrument PPS PLC programming for BL2 continued. EPICS software (db, EDM screens, IOC startup, etc) for the Target PPS has been written and is now ready for the test.

- We now have an initial version of the driver for a CAEN charge-to-digital-converter board working. The intention is to provide the timing system with a readout of the number of protons in the beam-to-target pulse in the RTBT. This hardware choice provides a way to implement this function with the timing required to deliver the information as needed. Target instruments will use this information in real-time.

- Development of ETS timing card software continued. A test-stand server with an ETS timing card was installed in the timing system test area. Users have access via an EDM dialog.

- An alternative, improved method for getting PV values from EPICS into LabVIEW is being investigated. A test program was written proving in principle that it works. However, at least two problems remain to be solved. First, all NADs use the shared memory library incorrectly. Second, it is difficult to use the new method in LabVIEW because LabVIEW doesn't provide pointers. The next step is to research the feasibility of adding other API functions for the Shared Memory library.

- LEBT / MEBT Chopper controls development continues. A ramp-up feature is being added, and we are currently conducting simulations. The MEBT chopper waveform was changed to improve design margins. New BPM log amp trigger output logic was added. The second chopper controller assembly was received and we are now preparing it for Lab testing.

- Meetings were held to clarify requirements for the new LEBT Chopper Switch. System and board-level block diagrams are being developed. Initial signal integrity simulations of outputs to the MOSFET Driver cards were prepared.

- A command-line-driven java program ("iocReportTab") was developed; it accepts IOC name(s) and/or system names from the command line and produces a report.

- Work is in progress to develop a collection of scripts for archive data management.

- Target Building Service Bay Evacuation Alarm (SBEA) system certification testing was conducted and is nearly complete.

- Work continued on Target utilities control screens. Changes to the MPS bypass screens (e.g. to make trip status readouts reflect actual status vs. derived status)) were completed.

- Target Building confinement control issues continue to be addressed. We worked on the Hot Cell door indicators and interlocks for PPS. We also worked on the 50-ton crane controls in the airlocks on the high bay. We completed installation and checkout of the PCE flow transmitter in the basement. (Final calibration still remains to be done).

SRF Facility

Project Upgrade

Survey and Alignment

RING INJECTION

Continued work on modeling beam trajectories through Ring Injection Area.

RTBT:

QV29: DS flange shimmed into perpendicularity with the beam line.

DH13 leveled prior to antenna alignment.
DH13 initial attempt at antenna alignment failed due to incorrect numbers given to us.
DH13 pole tips mapped and fiducials re-observed.
QV29: US flange alignment underway.
DH13: Pole tip offset fixture fiducialized in S&A lab.
DH13: Antenna aligned to new numbers and center bearing.
Harp: Check flange elevation in situ.
QV29: Work continuing on alignment of US flange.
Harp: Re-check harp flanges back on the Target instrument floor.

TARGET:
BL4A&B: Chopper alignment/mapping in situ completed.
BL2: Sample center table aligned in 2TU tank.
BL2: Chopper #3 stand re-observed with gauge plate.
BL2: Attempt made to straighten out chopper #3 kinematic mounts after incorrect installation (failed).
BL3: Align guide/collimator strong-backs in hut.
BL17: Align chopper cavity weldment.
BL18: Set out bolt holes for chopper cavity weldment.
BL17: Align first large base plate prior to drilling and grouting.
BL18 & BL17: set new beam line foil targets.

Miscellaneous:
Disassembled tracker #673, move from the BL4 to the 2TU tank, and reassembled.
Disassembled tracker #673, move from the 2TU tank, to the hut ,and reassembled.
Target foil targets inspected and re-protected.
Tracker #677 IA, IFM, and ADM offset calibrations performed in S&A lab.
Disassembled tracker #677, move from the CLO to Target, and reassembled.
Tracker #677 IA and IFM calibrations performed again as a check after moving tracker to target (failed).
Problems associated with aging laser tracker problems are becoming more frequent.

Cryo Systems

Mechanical Systems

Shielding progress.

Ring Systems Installation Activities

The Ring PSSO fire damper control cable pull was started.
The RTBT Bend Magnet DH13 mapping was started and 3 of 5 positions completed.

The RTBT Tunnel "T" section installation alignment buttons for Q29 were aligned and welded in position.
The RTBT Target Quad magnets buss cooling line insulator installation was started.
The RTBT Target Quad magnets Q29, Q28 and Q27 chamber beamline flanges were aligned and prepped.
The RTBT Target Quad magnets Q29, Q28 and Q27 chamber / bellows assy were welded and leak tested
The RTBT Target Quad magnets Q28 and Q27 chamber beamline flanges were aligned and prepped.
The RTBT Target Quad / HARP air and He lines installation continued.
The RTBT HARP Vessel remote clamp assembly was removed and replaced with the assembly from magnet Q27.
The RTBT HARP Vessel was installed and the joint successfully made to the downstream flight tube.
The RTBT HARP Vessel replacement remote clamp assembly for magnet Q27 was ordered.
The RTBT overhead shielding blocks' welding assembly continued.

Ring Water Systems Installation

The RTBT Magnet DH13 cooling was disassembled and re-established for mapping operations.
The RTBT Collimator Closed Cooling System test and checkout continued.

Electrical Systems

Power Supplies

- Continuing to construct parts lists and ordering spare components for power supplies
- Reconfigured ac source in diagnostic room, connected house power substation to some diagnostic racks, ran kicker noise test. The results did not show a sufficient reduction of noise. Will conduct one more test with the original clean power ac feeder's ground and natural disconnected. This was done and no significant noise reduction was seen either.
- Installed filler panels on front and rear of kicker monitoring chassis to cover exposed ac
- Replaced fuses in 4000 amp power supplies that were borrowed to keep DH110 on
- Supporting the magnet mapping group on DH13, diagnosing differences in EPICS calibration and external DCCT readings

Modulators

- Final drawing package for choke winding redesign has been completed and is presently being checked.
- Processed Oil on DTLME-5 & CCLME-3
- Completed installation of new oil heater and pump circuit breakers in all Klystron Gallery Modulators

AC Power

- Completed RTBT AC power distribution spreadsheet for Control room information
- Supported PSSO electrical power outage for FE-SS1, KL SS1, SS2, SS3 & SS4 to limit affect on Cryo & Vacuum systems
- Supported PSSO subcontractors on oversight of the Ring PPS exhaust fans control power installation

Installation

- Re-installed Rad Hard Insulators for Q27 – Q30 in RTBT Tunnel
- Completed cable pull and terminations for B.I.G. Kicker in Ring Tunnel
- Completed grounding of all Convenience Outlets in Ring and RTBT Tunnel

XFD work

- Produced roof truss layout drawing.
- Produced Rebar drawing designs.

Other

- Dave Anderson attended the DOE sponsored R&D Electrical Safety Workshop in Albuquerque. Participated in Work Control for R&D Subcommittee
- Produced PPS Beam On Light drawings for Klystron gallery
- Teresa Toomey completed LSM RSS reports